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| **Report Documentation Page** | | *Form Approved*<br>*OMB No. 0704-0188* |

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| 1. REPORT DATE<br>**MAR 2006** | 2. REPORT TYPE | 3. DATES COVERED<br>**00-12-2005 to 00-03-2006** |
|---|---|---|
| 4. TITLE AND SUBTITLE<br>**Rubrics Cubed: Are We Prisoners of Orsa-Style Decision-Making?** | | 5a. CONTRACT NUMBER |
| | | 5b. GRANT NUMBER |
| | | 5c. PROGRAM ELEMENT NUMBER |
| 6. AUTHOR(S) | | 5d. PROJECT NUMBER |
| | | 5e. TASK NUMBER |
| | | 5f. WORK UNIT NUMBER |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)<br>**U.S. Joint Forces Command,1562 Mitscher Ave,Norfolk,VA,23551** | | 8. PERFORMING ORGANIZATION REPORT NUMBER |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) | | 10. SPONSOR/MONITOR'S ACRONYM(S) |
| | | 11. SPONSOR/MONITOR'S REPORT NUMBER(S) |
| 12. DISTRIBUTION/AVAILABILITY STATEMENT<br>**Approved for public release; distribution unlimited** | | |
| 13. SUPPLEMENTARY NOTES<br>**Defense AR Journal, December 2005-March 2006** | | |
| 14. ABSTRACT | | |
| 15. SUBJECT TERMS | | |

| 16. SECURITY CLASSIFICATION OF: | | | 17. LIMITATION OF ABSTRACT | 18. NUMBER OF PAGES | 19a. NAME OF RESPONSIBLE PERSON |
|---|---|---|---|---|---|
| a. REPORT<br>**unclassified** | b. ABSTRACT<br>**unclassified** | c. THIS PAGE<br>**unclassified** | **Same as Report (SAR)** | **16** | |

# RUBRICS CUBED: AREWE PRISONERS OF ORSA-STYLE DECISION MAKING?

*COL Christopher R. Paparone, USA, and Dr. James A. Crupi*

This article argues that acquisition professionals who have developed psychological and cultural preferences for ORSA-style decision-making may be blinded to three other decision-making rubrics and the valuable insights that can be derived from them. The three alternative rubrics explained by the authors include: *programmatic* (by-the-book), *participative* (politics), and *emergent* (complex or chaotic) decision-making. The authors go on to provide insight into those alternatives and demonstrate the way in which decision-makers can see complex cause and effect relationships and diagnose a "rubrics cubed" decision-making pattern.

> *War is bounded by the referential extremes of the prebattle roll call and the postbattle body count, and is constituted within by the mundane and innumerable calculations (days counted, supplies counted, miles counted)....Indeed, counting is a speech act so pervasive during war time that it approaches an ideology; it is thus not simply a formal or typological question (What shall I count? How shall I count?) but also a fundamentally ethical one (Who counts? Do I count?).*
>
> — **James Dawes,** *The Language of War*[1]

The overarching goal of the *science* of operations research and systems analysis (ORSA) is to maximize effects despite limited resources to produce them. One reason that ORSA is part of the military decision-making culture is because it has historically provided a body of ready-made, technically rational methods to solve problems. In over 60 years of Department of Defense (DoD) decision-making, ORSA has served as the single most enduring and pervasive decision method and is embraced by the Defense community as a veritable paradigm.

Military applications of operations research began with the British military in 1937 with the development of the integration of radar and Hurricane fighter-interceptor squadrons. The British brought these analytic methods to the United States in 1940. Through World War II, the usefulness of ORSA was witnessed particularly in structuring successful anti-submarine and air bombing tactics, techniques, and processes. Over the course of the war, these quantitative research and analytical methods began to migrate to wartime policy-level decision-making (Miser, 1980).

By 1963, James R. Schlesinger reduced the Pentagon problem of managing the military "into two parts: (a) how much resources to divert to defense, and (b) how to use such resources" (1963, p. 295). Schlesinger (later appointed U.S. Secretary of Defense 1973-75) painted a world of predictability through detailed analysis, thereby confirming the seductive qualities of ORSA. Despite the U.S. debacle in Vietnam, governed largely by the quantitative mentality of the Robert F. McNamara's "Whiz Kids" (with the ORSA artifacts of enemy body counts, and "stop light" charts representing probabilities of Vietnamese village strongholds), DoD leaders emerged with an even greater penchant for ORSA-style decision-making. For example, the PPBS (planning, programming, and budgeting system) has evolved and spawned the recently adopted Joint Capability Integration Development System.

The military has displayed an almost unquestioned belief about the practical benefits of ORSA techniques and behaviors. Where mathematical analysis is appropriate, ORSA has delivered solutions to queuing and resource allocation problems. However, the cost of creating an exclusive cultural dependency on quantitative results and analysis and the preferences for a single decision-making method they foster may have already been too high given what we are learning while prosecuting the global war on terror (GWOT).

This essay argues that acquisition professionals who have developed psychological and cultural preferences for ORSA-style decision-making may be blinded to alternative decision-making rubrics and the valuable insights that can be derived from them. The authors go on to provide insight into those alternatives and demonstrate the way in which decision-makers can see complex cause and effect relationships and diagnose a rubrics cubed decision-making pattern.

## THE "RUBRICS CUBED"

Research strongly supports the proposition that there are four major rubrics or paradigms that dominate the way people make decisions: *analytic*, *programmatic*, *participative*, and *emergent*. Each rubric is initially addressed in isolation for easy understanding, and then the four are integrated into a more holistic and patterned view of decision-making in order to highlight the power of each.

### THE "ORSA" RUBRIC

Under this paradigm, decisions and anticipatory decisions (i.e., planning) are made to remain constantly ready for possibilities and probabilities. This kind of decision-

making is typified in diversified organizations (such as the DoD) that attempt to exercise strategic planning, budgeting, and organizational control (e.g., characterized by monitoring *dashboard metrics*, *roadmaps*, *balanced scorecard*, *management-by-objectives*, etc.). Decision-making is considered successful, in retrospect, based on whether forecasted targets were achieved and whether assumptions necessary for planning were true.

This rubric assumes that uncertainty can be measured and attempts to manage the outcome of decision analysis through programmatic decision-making (discussed next). The method assumes good judgment about the future from inferences, forecasts, estimates, projections, and conclusions derived from analysis. Hence, the decision-making process tends to be linear and based on predictive actions that will solve a *crisis* with pre-arranged planning steps. "Branches and sequels" are developed for less probable contingencies (in ORSA terms, "sensitivity analysis"). Those who are culturally oriented to this form of decision-making believe that it is better than the rest and should be used above all other forms. Distinctive assumptions of this method of decision-making are:

- **Professional values:** Decision-makers operating under this paradigm value hierarchical command and control, precision quantitative measures and estimates, predictability gained through careful external environmental scanning and intelligence collecting, competitiveness ("winning attitude"), and using a technically rational, highly analytical research process of deriving means toward an established end).

- **Knowledge discipline:** Physical science: assumption of a logical causation pattern of if "A," then "B." This is characterized by the fundamental belief that decision quality is based on the comprehensiveness of information available.

- **Conditions for decision consensus:** For effective decisions, participants agree on ends, but do not have to agree on ways/means. Consensus assumes agreement or at least an accepted directive authority on "strategic" goals (ends), with measurable uncertainty (probabilities) associated with cause-effect relationships (ways and means-ends coupling at strategic, operational, and tactical levels).

- **Time orientation:** Analysis is based on event-driven time (predictable). Attempts are made to make decisions according to events forecasted by the organization and "pre-approved" by the decision-maker usually via policy statements or planning documents.

The decision-maker interprets the external environment and then shapes his or her decisions according to the organization's internal operating systems thereby setting up a chain of linked decisions throughout the organization. This type of decision-making is thus inherently linked (usually as the precursor) to programmatic decision-making that is described below.

## "PROGRAMMATIC" RUBRIC

In this paradigm, the focus is on internal decision implementation typically as an eventual product of ORSA decision-making. It requires judgment based on set rules, uniform information processing, and compliance with documented regulations, directives, and standing operating procedures. Decisions are required when disparity between the current and required course of action is detected. In effect, decisions are *routinized* through standard operating procedures (SOPs). A process of formalized decision-making steps (formal budgeting, relatively fixed decision memoranda, and the use of policy directives) is necessary to make marginal adjustments (incremental changes) to existing programs in order to gain efficiencies. Decision-making is institutionalized—deemed successful based on the outcomes of set "habitualized" programs, adherence to regulations, and compliance with organizational routines. Information to assure decisions are implemented is routinely collected at various hierarchical levels and by "watch dogs" (such as formal *accountability* offices) through established processes. The most important decisions are made at the highest levels. In short, authority is cycled up and responsibility is cycled down the organization.

■ **Professional values:** Decision-makers in this rubric are dominated by bureaucracy[2] or by the rules. Related values include hierarchical authority structures, habituation, precision, speed, efficiency, clarity, regularity, reliability, certainty, and compliance, detailed information management, internal control measures, and internal process (re-) engineering.

■ **Knowledge discipline:** Information science − Emphasis is on assimilative knowledge.[3]

■ **Conditions for decision consensus:** For engagement under this rubric, conditions of agreement on both ends and on ways/means is the likely state. Decisions are commonly based in some directive authority (typically in the form of a policy statement derived from ORSA) that determines and/or approves both goals (ends) and the appropriate ways/means.

■ **Time orientation:** Decisions are normally set to clock/calendar time. In other words, decisions are made according to schedules. The decision-maker, fueled by ORSA methods, is oriented on institutionalizing decision structures at the macro-level (e.g., through organizational strategies, operational concepts, policy documents, and roadmaps). Coordinative mechanisms (e.g., SOPs and doctrinal techniques, tactics and procedures) are established and maintained at the micro-level of the organization in order to *pre-decide* smaller and more dispersed activities for those who work deeper in the bureaucracy.

## "PARTICIPATIVE" RUBRIC

This paradigm is in sharp contrast to the ORSA and Programmatic rubrics of decision. In this highly collaborative approach, the decision-maker exhibits a political

form of judgment in order to satisfy a diverse constituency or *stakeholders* affected his or her decisions. Consensus is the strategic goal.[4] The ideal participative decision process is ethical, collaborative, open to dialogue, negotiation, and sensitive to affected members and coalitions of the organization and others (e.g., sister Services, inside interest groups, and outside institutions). However, there are cases where contributors might attach importance to more "Machiavellian" (dark-side, or unethical) tactics of consensus building.[5]

> *The ideal participative decision process is ethical, collaborative, open to dialogue, negotiation, and sensitive to affected members and coalitions of the organization and others (e.g. sister Services, inside interest groups, and outside institutions).*

This type of decision-making is associated with contract negotiations, international relations, bi-lateral negotiations, professional organizations, university faculties and boards of directors as they exercise collaborative governance over decisions. The National Security Council, Joint/Interagency Coordination Groups, and intergovernmental work (federal, state, and local interaction) operate within this paradigm when synthesized policy recommendations have to be developed. Decision success is geared to whether consensus has been reached among the participants; therefore, the process tends to involve negotiation and bargaining (and sometimes subterfuge).

■ **Professional values:** Decision-makers are driven by a need for consensus. Hence, they incorporate collegiality, collaboration, and an attitude of *we are all in this together*. With respect to others, they can also encounter Machiavellian (i.e., darker side) values such as manipulation, deception, and use of equivocation.

■ **Knowledge discipline:** Human relations (e.g., social psychology) − The complex study of how humans, cultures, societies, and organizations interact.

■ **Conditions for decision consensus:** Typically, this rubric encounters participants who disagree on ends but agree on ways/means. A belief in consensus building is assumed because of the uncertainty of what goals (ends) should be even though there may often be agreement on their cause and potential solution sets.

■ **Time orientation:** People orient on social time. Time for building relationships is critical to establishing mutual trust or at least a condition of *trust but verify*. "Going

to the balcony" or socializing at a cocktail party might be more effective than a formal engagement at the table.

Making decisions is about establishing highly participatory, mutual relationships among other leaders and their collaborators who together intend to make real changes that reflect their mutual purposes. Under conditions of diverse ideological opinions, decisions can take on a seedy political flavor, where a "gift for influential argument" and perhaps "guile" become much more important than objective systematic analysis.

## "EMERGENT" RUBRIC

In the chaotic, highly complex, and highly interconnected global reality of this paradigm, leaders assume it is necessary to continuously experience and learn new valuations, usually from outside the boundaries of the organization and develop new or revised and more intuitive processes over time. Like in participatory paradigm, decision-making is not a unitary event in a centralized form, but is an interactive and continuous trial-and-error sensemaking activity that can be dispersed throughout the organization and across organizational boundaries. Because old mental models do not appear to work in highly complex situations, a social-psychological process called *sensemaking* is necessary to frame the situation and interpret it in new ways.

Planning (i.e., future decision-making) in this is unorthodox in that one *plans to learn* and accepts the uncertainty of *unplanned learning*. People continuously make sense and take action on the external environment and rely on mutual sharing of information and common understanding of emergent factors. Causes of problems and effects of decisions are considered mutually related (networked) and not linear. "Causal loop diagrams" (Senge, 1990) are used to contemplate (not predict) complex interdependencies and thus foster *butterfly effects* as small decisions can augment influence on these interdependencies.

Continuous trial, error, and feedback are part of an organizational learning cycle (learn and re-enact) that makes sense of what is happening. Assumptions about the quality of *emergence* are common in ad hoc, networked, and entrepreneurial "learning organizations" that face highly dynamic environments. High technology firms and research and development organizations typify these characteristics, as they tend to have a penchant for flexible structures that act as *complex adaptive systems*. Sensemaking is considered effective in small steps, with near-real time feedback on whether purposeful actions appear to cause adaptation to a fast changing environment. As successive *mini-decisions* are made (a trial-and-error process), progress is evaluated in terms of how well things are going in relation to environmental demands. Air Force Colonel John Boyd coined this form of decision-making as *observe-orient-decide-act*—the *OODA Loop*.

- **Professional values:** Decision-makers embrace uncertainty, flexibility, inductive reasoning, and freedom to learn by succeeding and making mistakes.

- **Knowledge discipline:** Complexity science and chaos theory.

- **Conditions for decision consensus:** This rubric is appropriate when participants disagree on ends as well as ways/means. Uncertainty of both goals (ends) and causal relationships (means/ways) is assumed, so ORSA and programmatic methods would be ineffective.

- **Time orientation:** Participants orient on event-time where external impacts are considered unpredictable. Time is spent paying attention to environmental events that will dictate the pace and direction of sensemaking. U.S. Marine Corps and U.S. Army doctrine positions this as expeditionary-style or "orientation" planning where you have to be "ready for anything."[6]

Those with *authority* focus not on deciding, but instead on setting organizational *network* conditions for ongoing system-wide adaptation and alterations that produce fundamental change without necessarily a plan to do so. A stated *end-state* is not only unnecessary it is counter-productive. Before one can make choices through sensemaking, one must frame their understanding in terms of *who am I*, *why I am here*, and *what is going on around me*? These questions are not easy to answer because they are questions of sense and not choice (Anderson & McDaniel, 2000).

## *Sensemaking requires regular interface with others and the development of a shared sense of meaning in the situation.*

Sensemaking requires regular interface with others and the development of a shared sense of meaning in the situation. Paying attention *together* enhances the emergent process. Organizational sensemaking, then, is often a struggle for alertness in constructing a mental model for defining what works (Weick, 1995, p. 187).

Important in understanding this decision paradigm is to contrast it with ORSA and programmatic ones. For example, the decision-maker, who subscribes to the ORSA paradigm, can fall prey to the real danger of *false learning* from the emergent paradigm point of view. If there are high levels of uncertainty, randomness, and ambiguity in an emergent situation, then what the decision-maker or his advisor appears to learn under the ORSA rubric may be bogus. The decision maker will experience some subjective learning that is direct and compelling and will come to believe that he understands the situation and has mastered it. If one were to suggest that he might be a victim of irrational learning, he would find it difficult to believe because everything in his environment tells him that he understands the world, even though his understanding is spurious.[7] Under complex, ambiguous, emergent conditions, more information and metrics do not remove ambiguity but may in fact increase it. Sensemaking results when confusion reveals that many meanings are associated with the problem at hand and as

a result of a lack of information or ignorance, although decision makers with a cultural proclivity for ORSA may be blinded to this conclusion.

One can enhance their understanding of decision-making by taking all of the above rubrics (*ORSA*, *programmatic*, *participative*, and *emergent*) into consideration at the same time. Studying how decisions are made (or not made) requires seeing simultaneous and patterned combinations of these types of decision-making that may be concurrent and in competition with one another.

> ### *To recap: When there is agreement on goals (ends) but disagreement on causality (ways or means) ORSA-style judgment is advised.*

To recap: When there is agreement on goals (ends) but disagreement on causality (ways or means) **ORSA-style** judgment is advised.[8] When there is agreement on ways/means coupled with disagreement on goals among constituencies, **participative** *compromise* is best—political bargaining, coalition-building, logrolling, *leaks to the press*, etc. If stakeholders see that an organizational solution is available under conditions of agreement with both ways/means and ends, **programmatic** (computational) decision-making may be more suitable. If all parties acknowledge neither ways/means nor clear ends are available, **emergent** decision-making may be dominant until causal sensemaking patterns and frameworks are created (i.e., a research and development or learning strategy) (see Table 1).

The above discussions would be incomplete without understanding the complexity of *defining the problem*. Research suggests that the *problem definition stage* in decision-

### TABLE 1.
#### DIAGNOSING AGREEMENT PATTERNS AND DECISION-MAKING PATTERNS ABOUT WAYS (MEANS) AND GOALS (ENDS) AND FINDING AN APPROPRIATE DECISION-MAKING APPROACH
#### (Adapted by the authors from the work of James D. Thompson and Arthur Tuden)[9]

|  | Goal (ends) Agreement | Goal (ends) Disagreement |
|---|---|---|
| **Ways/means Agreement** | *Programmatic Decision* (Computational/SOP oriented) | *Participative Decision* (Compromise/Guile) |
| **Ways/means Disagreement** | *ORSA Decision* (Analytical/Judgmental) | *Emergent Decision* (Learning) |

making is subject to multiple and complex patterned interpretations. When multiple constituencies with various interpretations are capable of influencing the decision, then decision-making becomes quite complicated or even impossible and people may attempt to oversimplify in order to get a handle on "big" problems that are typically "messy." Like in politics, *special interest* involves solutions looking for problems rather than vice versa. Each interested group can have its own ideological definition of the problem and their own causal theory may be at odds with others.

## A CRITICAL ASPECT OF DECISION-MAKING WITHIN ANY RUBRIC: DEFINING THE PROBLEM

Four types of problem definitions are worthy of mention: *intentional* (purposeful and planned); *accidental* (unguided and unplanned); *inadvertent* (purposeful but unplanned); and, *mechanical* (unguided but planned) (see Figure 1).[10] Some contextual truth exists when drawing from the perspectives of all four types.

For example, it is revealing to apply these patterns to the 9/11 terrorist attacks. The most common explanation in the U.S. press seems to favor the *intentional cause*—that inherently evil terrorists conducted the assault. Hence, the strategic decision to assault them globally in return is executed both purposefully and with good intentions. The decisions to create a Department of Homeland Security and to invade Afghanistan and Iraq reflect this causal story.

**Consequences**

|  | Intended | Unintended |
|---|---|---|
| **Unguided** | **MECHANICAL CAUSE**<br><br>· intervening agent<br>· machines<br>· trained animals<br>· brainwashed people | **ACCIDENTAL CAUSE**<br><br>· nature<br>· weather<br>· earthquakes<br>· machines that run amok |
| **Purposeful** | **INTENTIONAL CAUSE**<br><br>· assault<br>· oppression<br>· conspiracies that work<br>· programs that work | **INADVERTANT CAUSE**<br><br>· intervening conditions<br>· unforeseen side effects<br>· neglect<br>· careless omission |

**Actions** (row label)

**FIGURE 1.** STONE'S TYPOLOGY OF CAUSAL STORIES[11]

On the other hand, a *mechanical causal* interpretation of 9/11 is that airport security technologies failed; hence, the decision to restructure and federalize the airport security workforce and their equipment.

Some initial observers of the first plane hitting the first tower of the World Trade Center assumed this was an *accidental cause*. If this had been a plausible cause, the decision would likely to have been launching an investigation by the National Transportation Safety Board.

Finally, there is the *inadvertent causal* story, that somehow through neglect and careless omission, the United States failed to remain engaged in Afghanistan after the Soviets withdrew, and somehow ignored the cultural ramifications of a decade of staging U.S. military capabilities in Saudi Arabia that spurred Islamic fundamentalist radicals, such as Osama Bin Laden, to action (Kibble, 2002, p. 175). Fifty-five percent of European respondents (from a survey population from six countries) believe that failed U.S. foreign policy was in part to blame to the 9/11 attacks (American Society for Public Administration, 2002). Others maintain that the United States has been too soft on responding to overseas terrorist attacks, giving Bin Laden and other terrorist the impression that Americans did not have the will to fight back in earnest.[12] A decision to examine past U.S. foreign policy decisions might be a result of these inadvertent causal stories. A recent book by Richard Miniter attributes the Bin Laden attacks to the neglect of President Bill Clinton. According to the author, Osama bin Laden's rise to power and the 9/11 attacks were due to the inactions and failures of former President Bill Clinton and key members of his administration who followed a law enforcement approach to fighting global terrorism as opposed to engaging a war on terrorism on national security grounds (Miniter, 2003).

## PUTTING IT ALL TOGETHER

An expanded decision-making logic, beyond the single ORSA-based method, requires the decision-maker and staff to consider *multiple decision-making paradigms* and *causal stories* simultaneously. All of these types are present to some degree, in some combination, all of the time. Together, they create a *context* in which the professional must diagnose each decision situation. Various levels and positions within—and constituencies' outside—the organization may perceive the above decision patterns differently. An intricate view of the prevailing and shifting patterns appropriate for the decision at hand must be adopted by the decision maker. A summary graphic on the decision-making types with corresponding causal stories is shown below to assist the leader in recognizing complex and prevailing patterns (Figure 2).

In our view, ORSA has emerged as the prevalent paradigm in the DoD decision-making professional culture. Thinking out-of-the-box, as our adversaries do, requires professional reflection and critical thinking. Thomas Kuhn suggests that transformational thinking occurs when "the entire constellation of beliefs, values, techniques, shared by members of a given community changes" (1996, p. 175). Acquisition leaders, in particular, owe it to their craft and the soldiers, sailors, Marines, and airmen that depend on them to insure that they do not get locked into a rubric that traps them into a way

| Participative | Emergent |
|---|---|
| **Professional Value:** dialogue (w/potential Machiavellian dark side)<br><br>**Knowledge Discipline:** Human Relations<br><br>**General Decision Consensus:** Disagree on ends; agree on ways/means<br><br>**Time Orientation:** Social<br><br>**Theory of causation:** Inadvertent | **Professional Value:** embracing uncertainty<br><br>**Knowledge Discipline:** Complexity Science<br><br>**General Decision Consensus:** Disagree on ends and ways/means<br><br>**Time Orientation:** Event-driven (unpredictable)<br><br>**Theory of causation:** Accidental (random) |
| **Programmatic** | **ORSA** |
| **Professional Value:** bureaucratic<br><br>**Knowledge Discipline:** Information Science<br><br>**General Decision Consensus:** Agree on ends and ways/means<br><br>**Time Orientation:** Clock/calendar<br><br>**Theory of causation:** Mechanical | **Professional Value:** hierarchical/ command and control<br><br>**Knowledge Discipline:** Operations Research<br><br>**General Decision Consensus:** Agree on ends; disagree on ways/means<br><br>**Time Orientation:** Event-driven (predictable & contingent)<br><br>**Theory of causation:** Intentional |

**FIGURE 2.** THE RUBRICS CUBED MODEL

of making decisions that blinds them to other possibilities. Knowledge of distinctions among and between the above decision patterns includes an appreciation of the values that determine which pattern is at work and what it means to the outcome. Without that understanding, we become prisoners to the rubric of our own preference.

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# ENDNOTES

1. Dawes, J. (2002). *The language of war* (p. 30). Cambridge, MA: Harvard University Press. Interestingly, Dawes traces the roots of a quantification culture to the American Civil War (1861–1865) in his compelling narrative of the text available from that time period and in post-war writings.

2. Weberian sociology describes three sources of legitimacy, or how people succumb to authority in social contexts. These include bureaucratic (Weber called this *Zweckrational*), cultural ("traditional" or *Wertrational*), and emotional (*Afektuel*) processes. Weber describes bureaucracy under the higher order heading of "authority." Bureaucracy, according to Weber, is a manifestation of a specific kind of authority: "*rational-legal* authority." Rational-legal authority is based on a code of legal rules and regulations and the obedience of those in office to comply with them because they believe in their legitimacy. Bureaucracies include these characteristics:  Specialized tasks to be administered by bureaucrats are organized on a continuous, regulated basis (i.e., the behaviors listed in the competency map); Tasks are divided into functional areas, with requisite authority and sanctions (i.e., meta-competencies and general competencies are divided along "functions of the leader" and based on expected experience according to potential rank and position); Offices are arranged hierarchically with rights of control specified (i.e., the military calls these "leadership positions"); The rules of work are technical or legal; hence people must be trained in them (i.e., this is the whole idea behind mapping these "technical" requirements); The resources of the bureau are distinct from the personal resources of the members (e.g., government property and human resource management are not handled at the whim of individuals; hence, "leadership" is substituted with codified rules and processes);  The office holder cannot make personal use of that position (i.e., "selfless service" is enforced by monitoring or evaluating performance of these behaviors); and, administration is based on written documents. See Heydebrand, W. (Ed. & Trans.)(1999). *Max Weber: Sociological writings*. New York: Continuum.

3. Assimilative knowledge, according to Kolb, involves transforming information into institutionalized records, rules, doctrine, textbooks, and other structures that serve as "organizational memory" to guide the now bureaucratized formal roles (what Weber called *Zweckrational*). Tasks, conditions, and standards of work become routinized. Unless conditions are sustained for continual double- or triple-loop learning, the organization dominated by assimilated knowledge can stifle innovation and become very bureaucratic or mechanistic because assimilated knowledge is the most difficult to change (meaning is "tacit"). Training, supervised projects, and opportunities to apply knowledge on-the-job are helpful to set conditions for learning. Tasks, conditions, and performance criteria are standardized so that concrete learning occurs.

4.  Consensus, in its most democratic form, means, "problem solving that is open to creative, new possibilities in a climate that is created to ensure all people and views are heard, where unanimity is desirable, but not required." From Jacobs, T. O. (2002). *Strategic leadership: The competitive edge* (p. 119). Washington, DC: Industrial College of the Armed Forces.

5.  From Wilkof, M. V. (1982). *Organizational culture: A grounded theory approach*. Unpublished doctoral dissertation, University of Pennsylvania, 87-89. Wilkof's typology of tactics for achieving consensus explains both ethical and seamy ways. Morally clean tactics include: *Consensus through agreement* and *consensus through expertise*. Machiavellian (i.e., seamy or "dark-side") tactics include: *Consensus through exhaustion*, *consensus through destruction of credibility*, *consensus through sidetracking*, and *consensus through threat*.

6.  See Department of the Navy, Headquarters U.S. Marine Corps. (July 21, 1997). *Planning, Marine Corps doctrinal publication 5*. Washington, DC: Author; and Department of the Army. (January 1, 2005). *Army field manual 5-0, planning and orders production*. Washington, DC: Author.

7.  Cohen, M. D., & March, J. G. (1986). *Leadership and ambiguity: The American college president* (2nd ed.) (p. 200). Boston: Harvard Business School Press. If you are interested in exploring this type of decision-making, read Chapter 9, "Leadership in an Organized Anarchy," pp. 195–229.

8.  See Thompson, J. D., & Tuden, A. Strategies, structures, and processes of organizational decision. In Thompson, J. (Ed.). (1987). *Comparative studies in administration: Management and technology (continuity in administrative science)* (pp. 195–216). New York: Garland. (Original work published 1959)

9.  Ibid. See also a similar version to this adaptation from Mitroff, I. I., & Kilmann, R. H. (1981). The four fold way of knowing: The varieties of social science experience. *Theory and Society*, *10*(2), 227–248.

10. Adapted by the author from Stone, D. (1989). Causal stories and policy analysis. *Political Science Quarterly*, *104*(1), 281-300.

11. Stone, 285.

12. The United States attacked Afghanistan and the Sudan "from afar" with cruise missiles in August 1998 in response to overseas terrorist attacks.